IN THE SPECIFICATION:

Please amend the specification as follows:

Pursuant to 37 CFR § 1.121(b)(1)(iii), a marked up copy of each paragraph amended below appears on the page immediately following each amendment.

Please delete the paragraph that begins on page 3, line 6 and ends on page 3, line 12 and insert the following paragraph therefor:

--A problem with quasi-Monte Carlo method, however, is that a sequence of generated numbers from one base cannot be indexed into the dimensional space without producing very non-random correlations. One accepted technique is to use multiple bases to generate separate quasi-Monte Carlo sequences for each dimension. Base numbers of 2, 3, and 5 are most often used for 3-dimensional work. The problem is that as the base gets larger, the point cloud becomes more sparse.--

A1

Please delete the paragraph that begins on page 4, line 12 and ends on page 4, line 13 and insert the following paragraph therefor:

--FIG. 4 illustrates a plot view comparison of Monte Carlo vs. quasi-Monte Carlo errors for a 3-D simulation.--

A2

Please delete the paragraph that begins on page 7, line 2 and ends on page 7, line 8 and insert the following paragraph therefor:

--S is the resolution of each dimension, and can be selected on that basis. However, according to the present embodiments, certain combinations are

A3

a3

avoided, such that r, as defined below, is not factorable by either 2 (or other base, P) or D (the number of dimensions).

$$r = s^D/P^N$$ --

Please delete the paragraph that begins on page 7, line 14 and ends on page 7, line 18 and insert the following paragraph therefor:

a4

--Referring now to Fig. 3, a quasi-Monte Carlo 5000 point cloud on the same 1x1 grid as in Fig. 2 is shown, wherein the point cloud of Fig. 3 was generated according to the method of the present disclosure. Note that while there exists some regularity in the quasi-Monte Carlo point cloud, there also exist a possibility for variables to occur outside the regularity of the point cloud.--

Please delete the paragraph that begins on page 7, line 22 and ends on page 8, line 2 and insert the following paragraph therefor:

a5

--A test was conducted using both the Monte Carlo (MC) and the quasi-Monte Carlo methods on a 3 dimensional simulation problem. The test illustrates the superior error capability of the QMC method according to the present embodiments. The test simulation included the use of a sphere of 0.5 radius centered in a cube with sides of 1 unit. Sets of x, y, and z point-clouds were generated within the cube using the common Monte Carlo method and the quasi-MC method of the present disclosure. The ratio of points falling inside the sphere to the total number of points generated provided an estimate of the sphere's volume. In addition, the value of π is estimated from the volume. Since the real value of π is known, the error of the simulation can be determined.--

MARKED UP COPY OF AMENDMENT PURSUANT TO 37 CFR § 1.121 (b)(1)(iii)

Page 3, line 6 to page 3, line 12.

A problem with quasi-Monte Carlo method, however, is that a sequence of generated numbers from one base cannot be indexed into the dimensional space without producing very non-random correlations. One accepted technique is to use multiple bases to generate separate quasi-[MC] Monte Carlo sequences for each dimension. Base numbers of 2, 3, and 5 are most often used for 3-dimensional work. The problem is that as the base gets larger, the point cloud becomes more sparse.

Page 4, line 12 to page 4, line 13.

FIG. 4 illustrates a plot view comparison of Monte Carlo vs. [Quasi] quasi-Monte Carlo errors for a 3-D simulation.

Page 7, line 2 to page 7, line 8.

S is the resolution of each dimension, and can be selected on that basis. However, according to the present embodiments, certain combinations are

$$[r = s^{D} / P^{N}]$$

avoided, such that r, as defined below, is not factorable by either 2 (or other base, P) or D (the number of dimensions).

$$r = s^{D}/P^{N}$$

Page 7, line 14 to page 7, line 18.

Referring now to Fig. 3, a [Quasi] quasi-Monte Carlo 5000 point cloud on the same 1x1 grid as in Fig. 2 is shown, wherein the point cloud of Fig. 3 was generated according to the method of the present disclosure. Note that while there exists some regularity in the quasi-Monte Carlo point cloud, there also exist a possibility for variables to occur outside the regularity of the point cloud.

Page 7, line 22 to page 8, line 2.

A test was conducted using both the Monte Carlo (MC) and the [Quasi] quasi-Monte Carlo methods on a 3 dimensional simulation problem. The test illustrates the superior error capability of the QMC method according to the present embodiments. The test simulation included the use of a sphere of 0.5 radius centered in a cube with sides of 1 unit. Sets of x, y, and z point-clouds were generated within the cube using the common Monte Carlo method and the quasi-MC method of the present disclosure. The ratio of points falling inside the sphere to the total number of points generated provided an estimate of the sphere's volume. In addition, the value of π is estimated from the volume. Since the real value of π is known, the error of the simulation can be determined.